Pest Management Grants Final Report
Contract No. 98-0268

Gateway to a Less-Toxic Home and Garden

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Department of Water and Wastewater Resources
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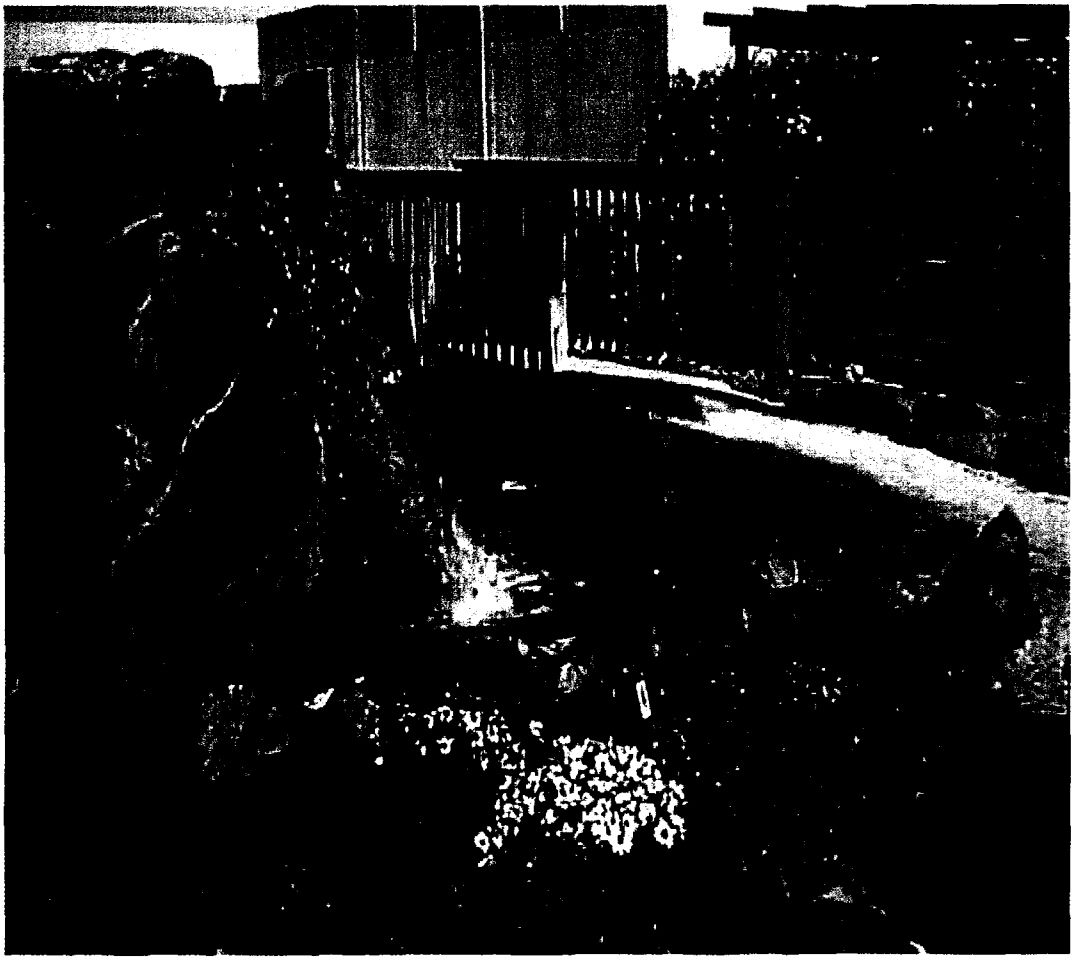
Prepared for California Department of Pesticide Regulation



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Acknowledgments:

We gratefully acknowledge the help of the Central Contra Costa Sanitary District's IPM Partnership for initially creating this program and providing program coordination documents and forms, and the San Mateo County Composting Program for playing such an active role in participation.

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Abstract:

The *Gateway to a Less Toxic Home and Garden* was a three part project designed to instruct the residential gardening community in San Mateo County about IPM and less toxic pest control in and around the home. It consisted of the addition of educational signage, plantings, and physical controls to an existing garden to create an IPM Demonstration Garden; the organization of an educator-training program; and the coordination of outreach presentations to the public via workshops and garden club talks.

The educator training program attracted 28 individuals to participate in the 5-week IPM training. Fourteen completed the training and eleven conducted some sort of outreach. Talks occurred at 20 events and reached over 250 people. Newspaper column articles written by a participant reached a circulation of 5,500 people on five separate occasions.

The garden signage and additions are complete and permanent, and will continually educate those that stop to stroll within Gateway Garden.

Executive Summary:

The *Gateway to a Less Toxic Home and Garden* was a three part project designed to instruct the residential gardening community in San Mateo County about IPM and less toxic pest control in and around the home.

The first component created an IPM demonstration garden in an existing water reuse garden. Educational signage was added including an entrance structure with a welcome sign and introductory information, and 5 sign stations covering different aspects of IPM. Plantings and physical controls were also added to the garden. A brochure containing all the information is located at the entrance structure. The garden is open to the public and approximately 10 to 15 people stroll through per day, reading the signs and taking the brochure. Formal tours for four groups have taken place in 1999 and more are expected for each year.

The second component involved organizing an educator-training program by soliciting experienced gardeners from the public, since there is no Master Gardener Program in San Mateo County. Announcements were put out to in garden center newsletters, garden clubs, College Horticultural Programs, on the Internet, on Cable TV, and advertisements in newspapers. Participants agreed to attend the 5-week training classes and in turn give 2 - 3 presentations to the public in the form of workshops and public talks or other similar outreach.

Twenty-eight people signed up to participate in the 5-week training series. Half that number actually completed the training. The training sessions were conducted by Tanya Drlik, an IPM specialist with over 23 years of experience. The training covered the basic principles of IPM; the problems associated with pesticide runoff into waterways, (especially organophosphates diazinon and chlorpyrifos); and IPM for ants, cockroaches, snails/slugs, weeds, aphids, fleas, spiders, and yellowjackets. The training also prepared the participants to present the information accurately to the public. All participants received a training binder to be used as a resource. Training evaluation forms were completed by 9 of the 14 volunteers that completed the training. All were very satisfied with the quality of the training.

Of the 14 that completed the training, only 11 did some sort of outreach. A total of 20 outreaches took place, most occurring in summer of 1999, which reached over 250 people. These outreaches were in the form of nine public workshops, six talks to garden clubs and associations, two talks at the San Mateo County Fair Floral Fiesta, and a talk to a professional gardeners' association, a homeowners' association, and an organic farm open house. No workshop evaluations were conducted however anecdotal evidence revealed that the information was well received and the people attending had their pest concerns addressed.

Outreach also took place in the form of printed educational material. One volunteer, a garden columnist for the *Pacifica Tribune*, wrote 5 different articles about IPM as a result of the training program. These were published in the *Pacifica Tribune* from April through July of 1999. Distribution of the *Pacifica Tribune* is 5,500. Printed material about IPM was published in another garden club's newsletter, a Garden Center's newsletter, and the *Master Composter* newsletter.

This project successfully laid the groundwork for any future IPM education programs in the County. It educated some Master Composters, who will likely convey IPM concepts in their continuing composting presentations, and educated some committed volunteers who may continue to educate the community about IPM in other informal venues.

The IPM educational signs in Gateway Garden are permanent. Other educational programs and volunteer opportunities that take place in the garden in the future will continually draw people there, who will then have the opportunity to learn its IPM message.

Body:

Introduction

This project was designed to provide educational information to residents in San Mateo County and promote the adoption of IPM practices among home gardeners. In doing so, it hopes to address the problem of pesticide runoff and the resulting toxicity to receiving waterways in San Mateo County.

Gateway Garden, built in 1998 by Department volunteers under another grant, demonstrates water conserving irrigation systems and water recycling using treated secondary effluent from the Wastewater Treatment Plant. This project added IPM educational signage and some IPM physical controls to the garden so it could also serve as an IPM demonstration and education garden. The concept was modeled closely after the IPM Demonstration Garden at the Central Contra Costa Sanitary District (CCCSD) in Martinez, California. We are grateful for their leadership and appreciate their permission to utilize their sign text as needed.

The educator training component was also modeled after the program already developed by CCCSD with the exception that San Mateo County has no Master Gardener Program and instead solicited interested members of the public to receive the training. It was assumed that significant cost savings would result by utilizing materials already developed and using the same IPM consultant. Outreach to the general public would be accomplished through talks and workshops to garden clubs and the public.

This project corresponds with the IPM Partnership* that the San Mateo Countywide Stormwater Pollution Prevention Program (STOPPP) is participating in, and as a result, both programs were enhanced substantially. Materials from the IPM partnership were utilized in the public outreach component, and in turn, the speakers were able to refer the public to the IPM Partnership stores where they could purchase less-toxic products.

Materials & Methods

1. The Garden component consisted of modifying sign text and contracting with a sign company to create smaller signs, which were done using paint-filled reverse engraving. Staff of the City of Daly City Public Works Department built the entrance structure and sign bases, absorbing labor costs. A welcome sign was hand-painted by a small sign shop in San Francisco. The smaller signposts were stained and erected by the program manager, and staff of the Water and Wastewater Resources Department volunteered labor for the installation of the entrance structure using concrete blocks. The signs in the entrance structure were made by the Streets Division using street-sign making equipment. The Public Works Department again absorbed labor. Copper barrier was installed around the vegetable bed and tanglefoot and tree wrap placed around some scale-infested citrus trees to deter

* The IPM Partnership is a Point of Sale campaign being implemented region-wide , which promotes less-toxic pest control products in nurseries, hardware and garden stores.

ants. Calendula was grown from seed and planted in the garden to add to the insectary plants. A sign company made smaller sign identification plaques and wooden holders were constructed by Water and Wastewater Resources Department staff.

2. The Educator Training component involved an extensive solicitation of participants for the 5 sessions. See Table 1 for the extent of this outreach. Tanya Drlik, an IPM consultant, conducted the training. The training covered the basic principles of IPM; the problems associated with pesticide runoff into waterways, especially organophosphates diazinon and chlorpyrifos; and IPM for ants, cockroaches, snails/slugs, weeds, aphids, fleas, spiders, and yellowjackets. The training also prepared the participants to present the information accurately to the public. All participants received a training binder to be used as a resource.

3. The Public Outreach component involved coordinating and advertising public outreach activities for the trained volunteers. Public workshops were organized, and garden clubs and professional gardening organizations were contacted to arrange for speakers. Volunteers were matched to the various venues and events were advertised in newspapers and elsewhere.

Results

1. The garden additions are complete and the signs provide a permanent education site for the public. See photos in appendix.

2. Twenty-eight people signed up to participate in the 5-week training series. All agreed and understood that they would be expected to attend all 5 sessions (with exception for illness) and that they would be expected to present the information to the public upon completion of the series. This was emphasized several times.

   Of the 28 people who signed-up, 25 showed up to the first class. Four people officially dropped out after the first class, but only 19 showed for the second, 17 for the third, 11 for the fourth, and 14 for the last class. A potluck lunch was held after the last class. An evaluation form was completed by 9 of the graduates. All were very satisfied with the quality of the training.

3. Once the educator training session were completed, the program manager began to assist in scheduling public outreach opportunities for the students. Arrangements were made to speak to garden clubs and professional organizations, and to arrange for and advertise public workshops. These began in May 1999 and continued through February 2000. Of the 14 who completed the training, 10 have done some sort of outreach to the public, thereby satisfying, at least partially, their commitment. Over 250 members of the public have been present at a public talk or workshop. Newspaper articles have potentially reached 5,500 on 5 different occasions, and other printed information reached another 548. See Table 2 for details of outreach events and participation.

   In addition to the documented outreach in Table 2, there were other significant benefits. The collaboration with the San Mateo County Master Composters has been invaluable. Two San Mateo County Master Composter Program staff members

participated in the training sessions. As a result of the training series, IPM principles have now been incorporated into the Master Composter Program. IPM principles are now a part of each Master Composter's presentation in their composting workshops.

Additionally, the coordinator of the Floral Fiesta at the San Mateo County Fair was a participant in the training. This resulted in the addition of a free IPM table at the County Fair (August 13 - 22) and 2 talks at the Floral Fiesta stage, which drew at least 24 people. The table utilized both this program's materials and those from the IPM partnership (fact sheets, stand-up turtle). Many people stopped at the table, took fact sheets and asked questions when it was staffed.

Discussion

The garden additions were slow to happen, as sign companies are expensive and the quotes received for the proposal budget proved to be too low. Daly City staff was called upon to do much of the sign building, with costs absorbed by the Department of Public Works. In addition, the time that was required of the project manager was extensive. It was basically a full-time job for the entire month of April, with a majority of working hours spent on the program in the remaining months. It should be noted that one person had the responsibility of carrying out all parts of the project and should other agencies with more staff available be interested in pursuing this kind of program, it would prove much less of a hardship.

The extensive outreach that was conducted to solicit participants in the educator training series, and the limited (although sufficient) response shows how difficult volunteer participation is in this kind of training. A significant time commitment on Saturday mornings in spring, coupled with a required commitment to educate the community, weeded out all but the most dedicated. Idealism met reality as more and more dropped the class as the weeks went on. However, the remaining people were a dedicated and qualified bunch, who has done much to educate others about IPM, both formally and informally. Because this was the first formal IPM education offered to the general public in San Mateo County, it drew leaders in the field (coordinators of programs, gardening columnist, Master Composters, etc.). The effect of these people being educated is much more than simply educating a home gardener. These kind of people influence their communities. Because of this, the program has had and will continue to have a rippling effect throughout the County.

This program has been very well received by the public. The public wants the information, and our only limitation was the underestimation of costs necessary to reach the public in an information-saturated society. More money should have been budgeted for newspaper ads to advertise public workshops, as the local Independent newspapers have not always been cooperative in listing the public workshops in their Calendar sections. Turnout for some public workshops was small. However, the few who did attend were happy with the presentations and felt they had their questions answered.

Summary and Conclusions

This program has been successful. The IPM educational signs in Gateway Garden are permanent and as more people discover the garden, more will have the opportunity to learn its message.

The informal feedback and connections made during this program were invaluable, and the synthesis with the IPM partnership went smoothly and was mutually beneficial. San Mateo County residents are ready for the IPM message and remain interested. Should another agency take on the task of continuing IPM education in this County, the groundwork will have been laid. Because IPM can be tailored to specific groups within the gardening community (roses, etc.), there are many opportunities to expand on the public education message if committed and creative people choose to do so.

References:

University of California, Davis. *Pest Notes*. UC Statewide Integrated Pest Management Project. May 1998.

Central Contra Costa Sanitary District. *The Less-Toxic Home and Garden Training Manual*. Central Contra Costa Sanitary District, Martinez. CA. 1998

Table 1 - EDUCATOR TRAINING SERIES SOLICITATION

Announcement flyer mailed:
Agricultural Commission
The San Mateo Arboretum Society
The San Mateo County Master Composting Program
The San Mateo Garden Center
UCCE
21 Garden Clubs in San Mateo County
The horticultural programs at Foothill College, CCSF, and the College of San Mateo
Stryboring Arboretum
Composting Mailing list of 90

Internet:
An announcement was posted on the www.gardens.com website

TV announcements:
City cable channel 8 and KCSM Samnet TV

Newspapers:
A press release was sent to the San Mateo County Times and the Peninsula Independent Newspapers. An article was published in the Independent in late February, and an announcement was published in the Nitty Gritty column of the Home & Garden Section of the San Mateo County Times. A display ad also ran for 3 issues of the Peninsula Independent in March.

Other:
Announcement was also put in the Daly City Water/Garbage bill.
The San Mateo Garden Center published an article about the training series in their newsletter, which was mailed to 300 people.
The San Mateo County Fair Floral Fiesta Coordinator was contacted.

Table 2 - Public Outreach

Public Talks

		# people attending
5/18/99	Foster City Garden Club	15
6/5/99	San Mateo Public Workshop	8
6/5/99	Menlo Park-Roger Reynolds Nursery x2	30
6/12/99	Daly City Public Workshop	4
6/15/99	San Mateo Gardeners Association	8
7/10/99	Half Moon Bay Public Workshop	17
7/14/99	Burlingame Public Workshop	2
7/17/99	Daly City Public Workshop	9
7/21/99	San Bruno Garden Club	10
8/3/99	Bayshore Residents Association - Daly City	27
8/15/99	San Mateo County Fair Talk	4
8/15/99	House of Humus farm- open house (informal)	10
8/21/99	San Mateo County Fair Talk	20
9/1/99	Pacifica Garden Club	25
9/11/99	Daly City Public Workshop	5
9/12/99	San Francisco Rose Society	21
9/18/99	Carlmont Nursery, Belmont	10
11/7/99	San Mateo Arboretum Society	9
2/10/00	Caroland's Garden Club	20
	Total to date	**254**

Pacifica Tribune

		Distribution
Apr 99	Slugs vs. Snails (IPM for snails & slugs)	5,500
4/14/99	Getting the Most from Your Garden Center (less-toxic products)	5,500
5/19/99	Are you a Little Miss Muffett? (beneficial spiders)	5,500
5/26/99	Weeded bliss (IPM for weeds)	5,500
7/7/99	From bloom to doom in one easy lesson (water pollution from chemical fertilizers & pesticides)	5,500
	Total potentially reached	**5,500**

Other Print

		Distribution
Jun-99	San Mateo Garden Center Newsletter (IPM for public)	400
Summer 99	Newsletter article to Garden Club presidents	35
May-99	Master Composter Newsletter	28
5/26/99	Newsletter insertion-Peninsula Garden Study Club	85
	Total potentially reached	**548**

Volunteer Outreach
Peninsula ~~Independent~~ Articles

Tribune

Hedge Hopping

Sharee Mahoney

Slugs versus snails

This year we in the Pacifica area have a real problem with those awful slugs and snails because of the very long and wet rainy season we have just endured. Fortunately, I have been taking a class on Integrated Pest Management in Westlake this past month and have learned many things which I intend to pass on to all of you. The whole idea being if we learn how to manage the pests in our gardens in a natural way, then we won't be polfuting our environment; especially our streams and water, hence not doing hard to ourselves! Makes sense, yes? So here are a number of tips on why these slimy guys come to your yard and how you can get rid of them, safely.

Slugs have no protective shell like snails do so they live on land that is poor in calcium and are able to crawl through small spaces, burrow into the ground and because of this they are more of a problem to root crops, buried seeds and emerging, young vegetation. When above ground parts of plants are wilting for no apparent reason, slugs may be feeding at the roots. Crops on the ground such as strawberries and unstaked tomatoes can be attacked by both slugs and snails.

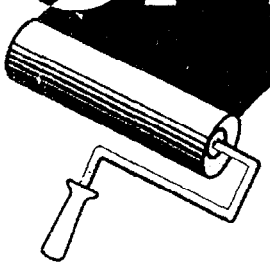
Snails are often found eating aerial parts of plants such as leaves, stems, buds, and fruit. Slugs like Brussels sprouts, artichokes, wheat and corn; and snails like beans, peas, tomatoes and citrus. Numbers of them can sometimes be impressive, (you think you got problems?) slug infestations have been recorded at 16, 000 per acre in one Brussels sprout field, and one citrus tree was recorded in California as having been covered with 3,000 snails in 1983.

They all prefer warm temperatures and moist soils. After rain falls, slugs congregate in heads of cabbage or lettuce. Overhead irrigation also encourages slugs and snails to migrate to the moist areas. Slugs need this moisture to replace what they lose in their slime trails. 80 percent of the slugs body weight is water. An active slug can lose 40 percent of its body weight in two hours of slime trail production. When this happens, they stop feeding and remain motionless on a moist surface and absorb water to re-hydrate. They are both greatly vulnerable to dehydration.

There are several methods of control for these unwelcome visitors. I personally like shaking salt on slugs to watch them disintegrate after make a meal out of a very expensive plant I just bought! However you can try coppery strips which will electrocute them, but doesn't seem to work after it turns green. Beer traps work real good when buried in the ground so they can drown in it. You can also try bare ground buffer zones that you sprinkle with diatomaceous earth. (The kind you buy in nurseries not the kind from pool suppliers.)

Natural enemies such as predatory beetles, skunks and possums can be a great help at this time. Some people have tried offering the neighbor kids money for each snail killed, but I'd make it a penny a snail at first, I heard of a guy who was offering a dime a snail, (he had to take out a loan!) The danger to cats, dogs and children as well as an alarming amount of bird species due to secondary poisoning from the poisons put out to kill the snails has got to stop folks. Encourage natural predators such as nematodes, predatory snails that eat brown snails, also snakes, frogs and birds will do a very good job on them. If you give your plants more calcium, then they will be more immune, crushed oyster shell is good for this. Also, they don't like Rhododendrons, or Junipers so you might use these as a barrier. And if all else fails, I'll see you out there with the rest of us wearing your minor's cap or flashlight in the dark trying to hand pick those little critters! I hate that-if you let them run around in corn meal for a couple of days that will clean out their slimy little systems and they you can cook them in brandy, garlic, and butter. Bon Appetite!

SPRING HOM



Getting the most from your trip to the garden center

Hedge Hopping

Sharee Mahoney

There's nothing like a sunny day in spring to urge you on a visit to the garden centers around town.

For a pleasant and productive trip for your shopping excursion, plan ahead. I know those magazine gardens all look so great, but don't buy a plant that won't grow in our area. If the garden center doesn't have that particular plant there is probably a very good reason, so ask if they have a better, hardier substitute.

If you shop at our local nurseries from Sloat Nursery across from the S.F. Zoo, to Montara, and Half Moon Bay, they will all know what grows in our area along the coast. By the way, Sloat Nursery also has a design kit and also will send out designers for $100 for the first hour.

Know your own conditions. How many hours of sun does your garden receive? What direction does the new flower bed face? On which side of the house will the shrub be placed? How much wind does that area get? Bring a soil sample along. They can tell you if your soil is clay, sandy, or loamy, and can suggest amendments, if necessary.

If you have a sick tree or shrub, bring along the affected leaf, twig, bloom, or even the bug that is killing your plant, (in a sealed plastic baggy, of course) so garden center professionals can recommend possible treatments. If you have a bug infestation, please insist on non-toxic sprays of soap sprays that will not hurt the environment. Read the labels. If it says "Poison," "Warning," or "Danger" on any of the labels, ask for a safer alternative, which there always is.

Dress for success. Wear comfortable walking shoes and jeans or pants that can get dirty. Drive a vehicle like a truck or van or go with a friend who has one, I know my eyes are always finding something too big for my car.

Arm yourself with photos of your yard. Notes of plants you like, a landscape plan or drawing would be a good idea. Shop the off-times; even busy nurseries have less busy times and those would be week days. Early morning or late day would be better.

If you are a week-end gardener try to get there very early. If they have very little left to pick from; ask when the next delivery will be and have them hold your order aside for you to pick up later. Don't forget to pick up some screening to bury around your new plants if you have a gopher problem, or try some container gardening this year.

Good luck!

May 26, 1999

Hedge Hopping

Sharee Mahoney

Weeded bliss

I'm talking about safe and sane weed management, without using pesticides. To reduce the likelihood of weeds growing up through permeable pavings of gravel, brick or stone, place at least three layers of building paper or roofing paper on the soil before installing the paving material.

This type of paper is very durable and doesn't decompose rapidly as does black plastic. It will prevent weed growth for many years. The soil under, and around wood or chain-link fences are hard to reach with herbicides or weed wackers so construct a "mow strip" at the time the fence is built. Put an 8-inch-wide strip of roofing paper. (You can also use brick pavers or concrete to cover the area immediately under the fence). This serves as a surface for one wheel of your lawn mower and a neat edge to your lawn. Stray weeds can easily be removed then, by pulling. Sawdust or woodchips can be put down over roofing paper for footpaths and crack filler added to concrete.

Consider growing annuals and veggies in a raised bed filled with nutrient-rich compost and mulch so flowers and veggies grow more rapidly thus crowding out and shading out the weeds.

Habitat modification: where feasible, use drip-irrigation systems that place water directly at the root zone of ornamental and edible plants. This applies water slowly enough for plants to absorb most of it soon after it reaches the roots, so little moisture is leftover to support weeds.

Manipulating soil fertility: an application of high-nitrogen fertilizer is just the thing to spur grass into vigorous growth at the expense of broad-leafed weeds. Mulch to limit light. This must be done immediately after soil cultivation. The timing is critical to prevent sunlight from reaching weed seeds brought to the surface when the soil was disturbed, it also prevents migrating weeds from settling in. Thus, it is best to have your mulch on hand before you begin digging.

A fabric weed mat also can be used. It provides long-term protection from germinating weed seeds and is superior to black plastic in that it allows air and water to penetrate the soil.

Also, you might try competitive planting such as tree or bush to shade out weeds in a certain area of your garden.

Remove the weeds before they produce seeds. If you wait until the flowers on the weeds open, be sure you don't let them lay on the ground, instead, throw them on a tarp or in a wheelbarrow. Throw weeds into a hot compost pile system because if you are operating a cool compost pile it will not suppress the weed seeds.

Also, you might try Spanish or Angora Goats which could be rented to eat dense brush such as poison oak, ivy or thistle, bamboo, and wild blackberry and turn it into grassland. Weeder geese also love weeds and can be good watchdogs too!

Soil Solorization is another process by which you put a clear plastic tarp over the area. Watering the ground good before making the tarp air tight so the heat from the sun will cook the weeds. This must be left on for four weeks and any tear or holes must be immediately taped shut.

If all this is not your cup of tea, a little hand weeding right now is easy before it gets too out of hand. Go get 'em!

Please join us at the Pacifica Garden Club, Sanchez Concert Hall, 1220 Linda Mar Boulevard on Wednesday, June 2, for a talk on dried silk flower arranging by Brenda Shields of Half Moon Bay. Also please join us on the center divider in front of Linda Mar Shopping Center on June 5-6 for a planting party of the center meridian on Linda Mar Boulevard from 10-3. Please bring a small shovel and a smile.

Are you a Little Miss Muffett?

Learn to welcome beneficial spiders

Hedge Hopping

Sharee Mahoney

At last spiders are gaining the recognition they deserve as beneficial predators of pest insects in the garden. They can control thrips, aphids, caterpillars, plant bugs, leafhoppers, cucumber beetles, grasshoppers, scarabs, and the common fly.

Unfortunately a lot of us have the "Little Miss Muffett" syndrome. These spiders I'm talking about are not harmful to humans.

In China, the importance of spiders in the garden has frequently been noted in ancient books. An old proverb has stated: "When spider webs many, years harvest will mature to ripeness." Unfortunately just when the need to know how spiders can benefit us, the USDA budget cutbacks meant the end of spider research.

What we do know, is, we have to avoid the use of pesticides in our gardens. We need to provide them with grass or straw mulches for a refuge habitat. Mulch provides refuge from temperature extremes. Use windbreaks to reduce wind speed so spiders who ride on the wind in a method called "ballooning" can crawl up your fence, lift its abdomen towards the sky and let loose a stream of silk that is strong enough to ride on in the wind (if the wind is not too strong).

The Chinese are carrying out many creative studies on the use of beneficial bugs in the garden and hopefully contact with their scientists will inspire U.S. scientists to investigate applied management of spiders in pest control. In the meantime I have been taking a course in Westlake at their wonderful new garden across from See's Candies and right next to Burger King that shows everyone the reuse of wastewater and native plants, etc.

We were studying Integrated Pest Management over the month of April and I have promised myself, and them, to pass all this information on to you. I also am forging ahead with a garden at Sanchez Art Center that will teach all of us pest management, native plants, butterfly gardening, herb gardening, and a place to teach our youth why we need to take care of our precious eco-system and not to pollute our streams so our fish will not be contaminated thus killing off all of our wildlife. You may wish to know more about spiders since so little is known about them. The more you observe them, you will be able to see for yourselves which spiders control the pests that are of concern to you and which plants, and where they congregate most, so you can encourage these spiders to stay.

There are 3,000 species of spiders in the United States and the only one to be a cause for concern in the Bay Area is the Black Widow. Very few spiders are even equipped with mouth parts that can pierce human skin. Of course if a bite affects a large area, is very painful, and/or is followed by dizziness, fever, or nausea, seek medical advise immediately. Try to capture the spider, drop it in a small jar of rubbing alcohol, and save it for I.D.

Vacuum instead of spraying the webs around you house. Install screens and caulk cracks. Teach children not to tease spiders in their webs or poke them with bare fingers. Remember Black Widows are timid, they are reluctant to bite even when provoked. They spend their lives waiting for prey, they don't go out hunting. They are shiny black with a red hourglass mark on their stomachs.

Common household pesticides are showing up in our treated wastewater and in our Pacifica creeks, and killing aquatic life at an alarming rate so please learn new methods of dealing with bugs. So we can say when the spider sat beside Miss Muffett did condone: "Since I understand you better, let this garden be your home."

July 7, 1999

From bloom to doom in one easy lesson

Hedge Hopping

Sharee Mahoney

This is such a wonderful time of year when our gardens are bountiful and beautiful. I know some of you got inspired by our Pacifica Garden Club's Garden Tour this year, and why not? Weren't those gardens spectacular? A great job done by Arleen Ryan and her committee.

I hope you all can enjoy some time in the outdoors. You might want to bring some of it indoors with you, too. Most people only use a fraction of the things available to them, but faded hydrangeas, or still-green berries, and grasses with sees heads all look great in bouquets. (You might even find an old bird's nest to tuck in also.) Lavender and thyme give the whole room a wonderful aroma too.

When you take your cuttings, carry a bucket of warm water and immediately plunge the cut stems into it.

The warmth shocks the stems into absorbing more water. Use a large deep vase when you can, as it creates greater water pressure so stems absorb water better and blooms will last longer. Strip the foliage off the stems and change the water frequently adding a few drops of bleach to prolong the freshness.

To prolong the life of wilt-prone foliage such as ivy or fern, simply spray with a solution of liquid floor wax such as Future or Klear and an equal amount of water.

Try framing some ferns for a cool summer look or a special summer gift. Look for ferns with perfectly formed leaves with no spots. Create an intriguing botanical study showing the leaf with the root and the handwritten name of each specimen written in black ink at the bottom of the paper. (A wonderful, personal touch.) The kinds of fern to look for are Lady Fern, Tatting Fern, Maidenhair Fern, Fiddlehead Fern or Ostrich Fern.

Place your ferns between two paper towels. Put some large, heavy books on top and let dry for five days or more. Lay the pressed ferns onto Bristol board with a rough surface. Brush light "tacky" glue onto tips and middle and bottom of fern and press gently into place.

Allow to dry. Finish with handwritten identification at bottom (a great part of this project's charm). Carefully slip into glass covered frame.

While you're sitting on your porch considering which flowers and veggies might need a dose of Miracle-Gro and what weeds might need a squirt of Round-up, I have a few reasons why you should never, and I mean never, use chemical fertilizers and pesticides on your property.

First of all they can make you and your family and your pets and the wildlife sick. S-I-C-K, nausea, vomiting, skin rashes, leukemia, and other cancers, weakening immune systems, AND they can make us infertile as a species. They leach into the ground water and pollute our drinking water, making people, animals, fish and birds SICK. Pesticides kill the bad bugs as well as the good bugs and the bees which pollinate our gardens.

Chemical fertilizers add nutrients to the soil but they don't add anything else and before you know it, the soil structure is so weak that it can't hold itself together, and it starts to erode and collapse.

Once it starts eroding, it clogs up the rivers and streams, and it goes all the way out to sea and kills the coral reefs. Even using pesticides in the home can contaminate water supplies because many people dump them down sinks, toilets, sewers and storm drains. It all comes back to your drinking water.

Don't do it. Don't buy them in the first place! Spend your money on a great new plant instead!

There are plenty of natural alternatives to pesticides, which reminds me I wanted to tell you that Linda Mar Ace Hardware is now carrying live Lady Bugs in a bag and those little bugs will kill all your aphids on your roses and more. Also, there is a great little water sprayer I found at Half Moon Bay Nursery called "Water Quick," a great invention that lets you water with full force water that turns into aerated water and doesn't splash all the water out of the large pots that you might have around your patio. It doesn't splash all the dirt out either or waste water with all the splashing" No wet porches and no wet shoes (it's marvelous). Also you can call 800-396-8585, for this item. So treat yourselves to something nice this summer and stay away from those pesticides, remember there were no pesticides in the Garden of Eden!

Please be our guest tonight at Sanchez Art Center to hear Madalyn Drago of the Fuchsia Society teach the Pacifica Garden Club how to Bonsai little Fuchsia's into fabulous little Garden Designs which would bring you so much pleasure to look at on your patio this summer.

We meet the last Wednesday of the month from 6:30-8:30 p.m. in the Sanchez Art Center concert hall at 1220 Linda Mar Blvd.

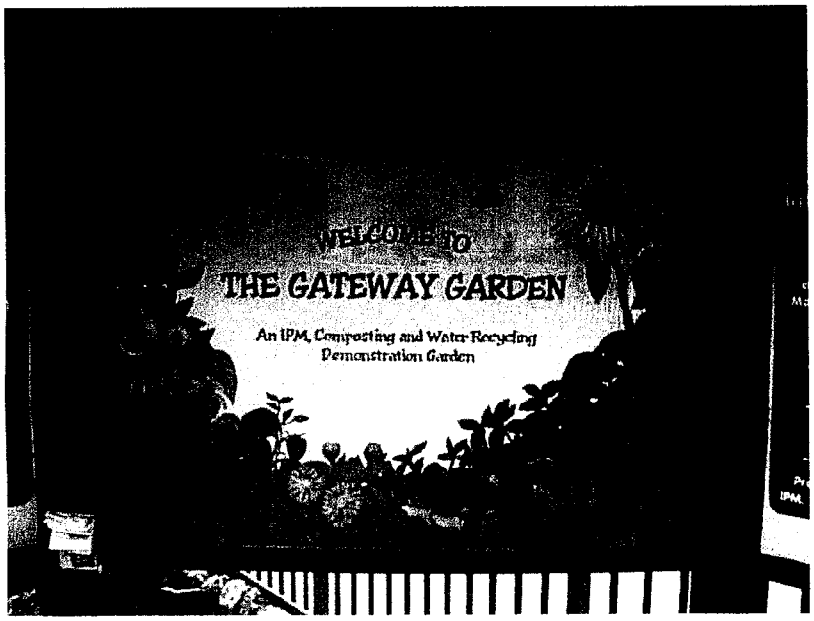
Guide helps you 'name that tree'

Pacificans love the environment, especially trees. Now there is help for amateur naturalists in identifying species of trees.

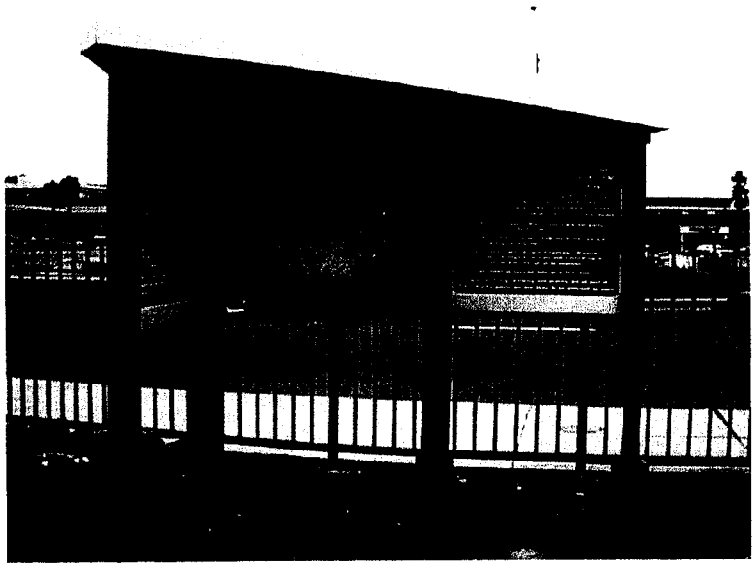
"What Tree is That" is available from the National Arbor Day as well as golden chinkapin and peachleaf willow, redbuds and redcedar, sycamore and saltcedar and sequoia and spruce. Dozens of drawings illustrate the trees' leaves or needles and their

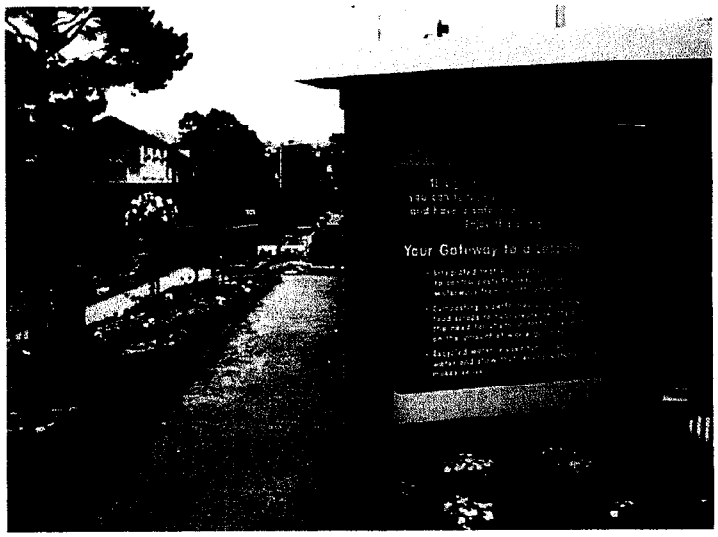
Photos
Gateway Garden IPM Additions

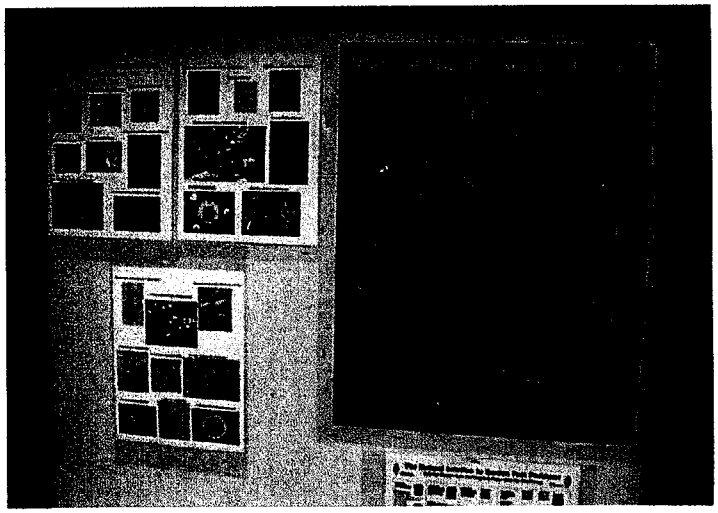
Gateway Garden, Daly City

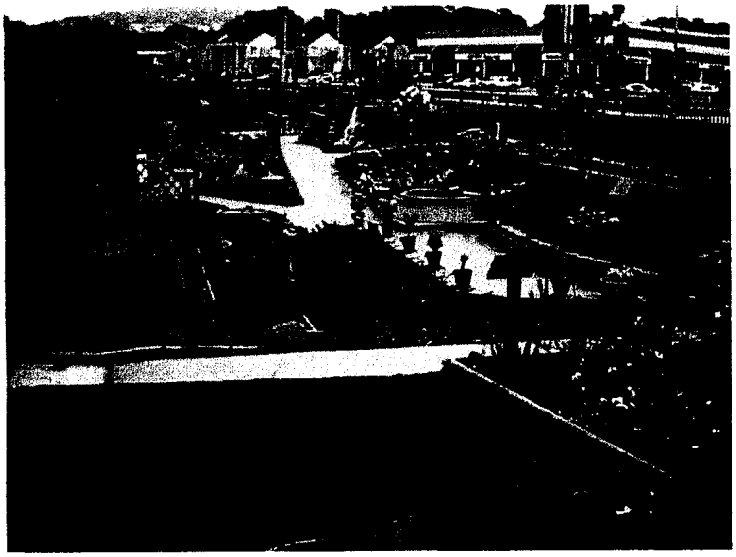


The Entrance Station contains the welcome sign and signs describing the garden and introducing the concept of Integrated Pest Management. On the back is a poster of beneficial insects and pictures of some insectary plants that naturally attract them.





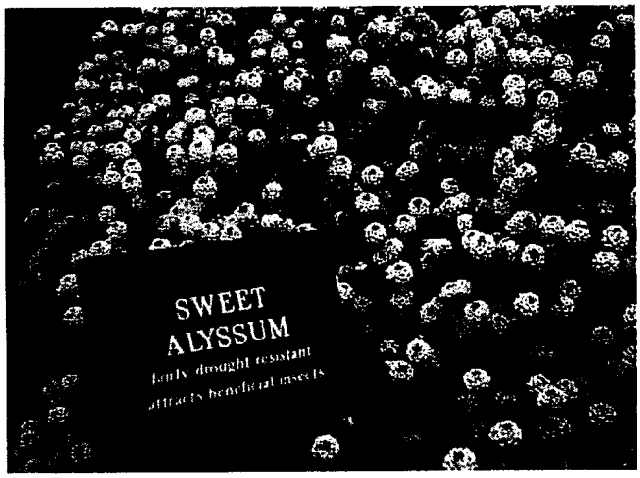


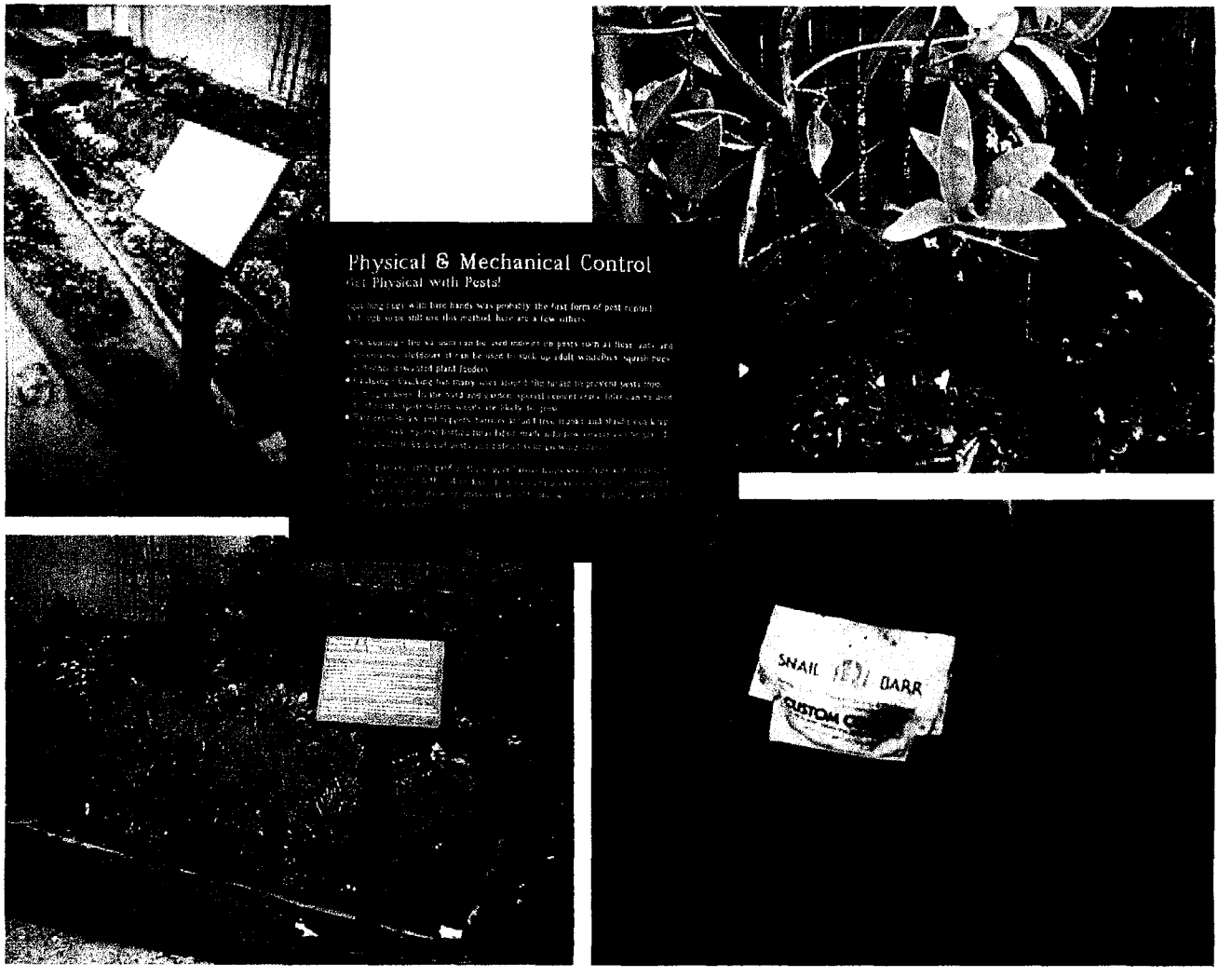


Sign describing Chemical Controls

Sign describing the importance of proper irrigation in front of lawn irrigated with recycled water

A visitor reading a sign describing Biological Controls.
A plant ID sign elsewhere identifies Sweet Alyssum as a plant that attracts beneficial insects.





This sign near the vegetable garden describes Physical & Mechanical Controls. The sign refers the reader to two physical controls present in the garden - a copper snail and slug barrier installed around the vegetable bed, and the sticky barrier around the trunks of the citrus trees nearby to control ants. There is also a beer-type slug trap present here and elsewhere in the garden.

Bob Donati (right) and Dean Vittori, who created the garden from a patch of weeds in 1998, stand by a sign describing the importance of healthy soils. To their left is the area that will be dedicated to composting education in the future.

Newspaper Coverage of Project

THE INDEPENDENT
SERVING DALY CITY, BRISBANE AND COLMA
TUESDAY, FEBRUARY 23, 1999

Garden pests topic of DC educational series

Gardeners who want to learn about less-toxic pest management techniques are invited to participate in a free Daly City educational series.

The series will be offered on five consecutive Saturday mornings beginning April 3. It is made possible by a $10,000 grant awarded to the Daly City Department of Water and Wastewater Resources.

The department applied for the grant — offered by the California Department of Pesticide Regulation — because of the increasing problem of pollution runoff into Bay Area creeks and streams, according to Karen Vitulano of the city's Stormwater Pollution Prevention Program.

Chemicals applied to local gardens are a major source of the problem because they flow into storm drains and eventually make their way into the water supply.

Mayor Adrienne Tissier said the city's goal is "getting the public to realize there are other ways to control pests that are safer, healthier and don't contaminate waterways."

The series will address "integrative pest management" techniques, which include cultural, biological and chemical methods of controlling pests.

An example of a biological control is obtaining green lacewing insects to prey on aphids. A cultural control could be pulling weeds by hand rather than chopping them up with a mower.

The series coincides with an educational campaign being launched by the San Mateo Countywide Stormwater Pollution Prevention Program. As part of that effort, less-toxic techniques will be described on displays at 16 garden stores throughout the county.

For more information on the Daly City series, or to register before a March 22 deadline, contact Vitulano at 991-8208.

—Independent Staff Report

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INDEPENDENT
SERVING DALY CITY, BRISBANE AND COLMA
TUESDAY, SEPTEMBER 21, 1999

SPECIAL TO THE INDEPENDENT

Garden designers Bob Donati (back left) and Dean Vittori show students Keith Vittori (front left) and Joe Gotelli the koi and goldfish pond at Daly City's Gateway Garden, a growing example of less-toxic pest management. The pond is kept free of algae with an ultra violet light rather than toxic chemicals. Below, strawberries grown the garden are cultivated without the use of chemical pesticides.

Gardening the NON-TOXIC *way*

Local agency gives tips on pollutant-free planting

By [illegible]

A garden has received statewide recognition for helping residents of North San Mateo County learn about getting rid of bugs and rodents without the use of polluting pesticides.

The North San Mateo County Sanitation District's Gateway Garden, located in Daly City on John Daly Boulevard across from the Westlake Shopping Center, recently received special recognition from the California Association of Sanitation Agencies for its unique approach to pollution prevention education.

Karen Giuliano, who works with the Daly City

GARDENING: page 4A

ROBERT PALU

ROBERT PAUL

The garden at work — plants wait to be included in the Gateway Garden. Karen Vitulano, who works with the Daly City Stormwater Pollution Prevention Program, maintains the new informational signage at the Gateway Garden. Below, the signs educate the public on less-toxic pest management.

GARDENING

Continued from 1A

Stormwater Pollution Prevention Program, developed the educational project in the garden after obtaining funding from the California Department of Pesticide Regulation last spring.

Informational signs have been placed throughout the garden so that residents can take a self-guided tour in order to learn about "less-toxic pest management."

According to studies done in Contra Costa County to determine the source of Bay pollution, polluted storm water run-off is the largest source of toxins in the Bay. Vitulano said that although the Clean Water Act helped eliminate many sources of pollution, the Bay Area has a long way to go in terms of cleaning up the polluted run-off.

"People will wash paint brushes in the streets and it runs into the storm drains, an express route to the Bay," she said. "Even washing your car pollutes, and it's better to go to a car wash."

But the primary villain in the fight against toxic pesticides is Diazinon, a chemical that Vitulano said lines the shelves of most garden sections of major stores and is most commonly used for household pests. She said this common pesticide is toxic at extremely low doses.

"You've heard of measuring things in parts per million or billion - this stuff is toxic in parts per trillion," she said. "They say that one drop of Diazinon in two swimming pools of water would be enough to kill one particular organism."

The organism, a water flea called Ceriodaphnia Dubia, is most commonly used to test the toxicity of chemicals. Vitulano said that since the flea is a food source for many different fish, killing off this link in the food chain will in turn seriously alter the underwater life in San Francisco Bay.

The Gateway Garden's signs help visitors learn alternatives that are just as effective as pesticides like Diazinon. "Integrated Pest Management," as the method is known, promotes using non-toxic soaps and oils that can be sprayed on plants to repel pests, or the use of natural pest predators like lady bugs that consume aphids, a common garden pest.

Besides alternative solvents and methods to rid gardens of pests, Vitulano said the garden also promotes "a philosophy about tolerating a certain amount of damage."

She said that the holistic integrated pest management approach includes maintaining a healthy garden where plants are properly irrigated so the plants can resist predators on their own before gardeners turn to chemical pesticides. It also includes learning to recognize which bugs will cause damage.

"When you get pesticide and spray plants, sometimes you're killing the good bugs - the bugs that work for free (by eating insects that do damage to plants)," she said. "People don't know the difference. They will see a bug and think it's just any bug, and then you end-up with a cycle that relies on chemicals."

Vitulano said that Gateway Garden is a way for gardeners to get closer to nature, "learning about what's going on in your garden and controlling it so that it doesn't rely on chemicals that are so potentially damaging."

From hand picking plants to the use of slug traps, attracting "good bugs" with certain plants and spraying plants briskly with water, Vitulano said the garden's signs attempt to educate the public on methods that are safer for the Bay as well as pets and children. She hopes that some of the garden's information will soon be available on the Daly City web site.

Until then, residents can visit the park from 9 a.m. to 5 p.m. to take a self-guided tour while the Department of Water and Wastewater Resources makes arrangements to extend the garden's open hours.

Free workshops on topics such as less-toxic gardening and backyard composting were held at the garden during September. Residents who are interested in arranging group tours should call 991-8208.

HALF MOON BAY REVIEW and Pescadero
Vol. 100 - 1
Serving The San Mateo County Coastside since 1898
Wednesday, April 21, 1999

Bugs in your garden?

County kicks off campaign to rid toxics

San Mateo County hardware and nursery retailers and the San Mateo County Storm Water Pollution Prevention Program (STOPPP) kicked off a campaign this month aimed at keeping toxic pesticides out of storm drains and sewers.

Participants hope to give residents effective means of coping with pests without harming water quality.

Employees armed with training supplied by STOPPP will be on hand at hardware stores and nurseries to educate customers and offer advice about less-toxic alternatives. Store shelves will be stocked with pest control products that are less toxic, identified by cards reading "Our Water, Our World."

Fact sheets on eight different subjects — ants, aphids, fleas, spiders, cockroaches, proper disposal of pesticides, lawn care and beneficial insects — will be available in stores.

Locally, Ocean Shore Hardware in Half Moon Bay is participating in the program.

Less-toxic techniques, known as integrated pest management (IPM), manage pests in ways that reduce environmental and health risks. IPM uses regular monitoring and knowledge of pest biology to determine if and when treatment is needed.

"By using this less-toxic approach, people will see their gardens flourish, unwanted pests diminish and the water quality of the Bay and creeks improve," the program's organizers stated in a press release.

Some IPM techniques include using ant baits instead of Diazinon sprays, or filling holes and cracks with caulk to keep ants from entering homes. Insecticidal soaps and oils are also effective alternatives to Diazinon for controlling aphids, as is planting particular varieties that will attract beneficial insects to control aphid populations.

In addition to the store campaign, the City of Daly City is making its "Gateway Garden" into an Integrated Pest Management demonstration garden to demonstrate IPM principles to the public and to schoolchildren. For additional information about the less-toxic campaign or the IPM demonstration garden, call Karen Vitulano of Daly City, at (650) 991-8208.